

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 038a WO	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/EP2004/013710	International filing date (<i>day/month/year</i>) 02.12.2004	Priority date (<i>day/month/year</i>) 06.12.2003	
International Patent Classification (IPC) or national classification and IPC B62D5/04			
Applicant ZF LENKSYSTEME GMBH			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or <input type="checkbox"/> sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																								
<p>4. This report contains indications relating to the following items:</p> <table> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input checked="" type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/013710

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

international search (Rule 12.3 and 23.1(b))
 publication of the international application (Rule 12.4)
 international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished
 the description:
 pages 1-11 as originally filed/furnished
 pages* _____ received by this Authority on _____
 pages* _____ received by this Authority on _____
 the claims:
 nos. _____ as originally filed/furnished
 nos.* 1-25 as amended (together with any statement) under Article 19
 nos.* _____ received by this Authority on _____
 nos.* _____ received by this Authority on _____
 the drawings:
 sheets 1/3-3/3 as originally filed/furnished
 sheets* _____ received by this Authority on _____
 sheets* _____ received by this Authority on _____
 a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. The amendments have resulted in the cancellation of:

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. II Priority

1. This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:
 copy of the earlier application whose priority has been claimed (Rule 66.7(a)).
 translation of the earlier application whose priority has been claimed (Rule 66.7(b)).
2. This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:
 - 1 DE102004003582.2 has not been provided and is not otherwise available. The validity of the priority of this document therefore cannot be determined.
 2. Although the content of the EP03028023.4 (EP-1431161) is similar, that document differs in principle from the application:
 - different description;
 - different figures;
 - different claims.

In EP03028023.4, the second input shaft is driven by a servo motor in the manner described in claim 1. However, the differential drive is not in the form of a harmonic drive.

A claim to the same subject matter is therefore unfounded.

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International application No.
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Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	1–25	YES
	Claims		NO
Inventive step (IS)	Claims	1–25	YES
	Claims		NO
Industrial applicability (IA)	Claims	1–25	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

This report makes reference to the following documents:

D1: DE 102 53465 A1 (ZF LENKSYSTEME GMBH) 22 January 2004 (2004-01-22)

D2: US-A-6 029 768 (KIYOSAWA ET AL) 29 February 2000 (2000-02-29)

D3: DE 19748 667 A1 (TOYOTA JIDOSHA K.K., TOYOTA, AICHI JP; TOYOTA JIDOSHA K.K., TOYOTA) 20 May 1998 (1998-05-20)

3. The subject matter of claim 1 (and thus all of the claims) is novel.

None of the documents mentioned in the search report explicitly relates to a differential drive in the form of a harmonic drive, wherein the servo motor is not supported on the steering column.

4. The subject matter of claim 1 (and thus all of the claims) is inventive.

D1, which is considered to be the closest prior

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Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

art, describes a harmonic drive that can be in the form of a differential drive (see D1, paragraph [0048]), but does not provide detailed structural features.

The subject matter of claim 1 differs from this known harmonic drive (of D1) by the detailed structural features, wherein the servo motor is not supported on the steering column.

The problem of:

- providing a design in which the mass of the servo motor does not contribute to an increase in the moment of inertia of the steering shaft

is solved in an inventive way because it is not obvious from the prior art how such a differential drive should be designed:

- D1 (paragraph [0048]) only vaguely refers to differential drives.

- D3 discusses a servo motor that is separate from the steering shaft (D3, figure 13) as prior art. However, D3 proposes a solution that goes precisely against this design.

A person skilled in the art therefore would not anticipate the design of a differential drive in the form of a harmonic drive according to claim 1 from the prior art.